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AUTHOR Ruchkin, Judith P.
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ABSTRACT

This report represents a summary of a larger, on-going investigation in teacher education committed to providing a detailed description of the differences found in teacher center and noncenter programs. Part one describes the design, and then summarizes the findings, of the initial phase of the center study by providing the answers to the six specific questions investigated. Part two includes possibilities and recommendations for subsequent phases of the study. Part three is speculative and questions the adequacy of current models serving as bases for teacher information from eleven separate audiences: early preservice students, cooperating teachers, student teachers, university supervisors, and principals of schools--both in and outside of centers--and center coordinators. The professional induction experience is reflected through a variety of specific training options, supervisory behaviors, and levels of concerns. The analysis of the data consists of comparisons between center and noncenter settings, elementary and secondary levels, and between school systems and individual center locations. The basic question underlying the study is whether there are observable differences between centers and noncenters and, if so, what are the distinguishing features. For early preservice students, student teachers, and inservice personnel there appear to be a greater number and variety of exposures to training practices and instructional experiences in centers than in noncenters. (DMT)

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Empirical Inquiry into Teacher Centers

JUDITH P. RUCHKIN

division of teacher education
321 education building
indiana university
bloomington, indiana 47401

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Teacher centers are flourishing throughout the nation. The movement to join the bandwagon is readily observed by those attending annual sessions of the American Association of Colleges for Teacher Education (AACTE), Association of Teacher Educators (ATE), and the American Educational Research Association (AERA). While the call for participation resounds, on-going inquiry is occurring which seeks to illuminate center activities. One of these empirical searches into centers is reported below. It represents a summary of a larger, on-going investigation in teacher education committed to providing a detailed description of the differences found in center and noncenter programs. The study is a partner initiated, internal accountability effort undertaken as an aid to informed decision-making. It signals systematic inquiry into the precise characteristics of the and noncenters which have been in existence received national recognition from AACTE vement Award and are actively sought by out access to such professional develop-

sponsored by sharing school systems and the University of Maryland, College officers are shared, school-college arrangements for furthering the professional development of educational personnel. The center structure provides for increased involvement of school personnel in preservice preparation and greater University participation in inservice efforts. A full time staff member, who is a joint appointee of a school system and the College of Education, coordinates activities in the field and is charged with meshing the available material and personnel resources of the two institutions for maximal benefit of each center. Membership in centers varies from two to four school constituents and some units may also have classroom and/or departmental satellites. The major program participants are pre- and inservice teachers, although some counseling and administrative interns have been involved over the years.

This report first describes the design, and then summarizes the findings, of the initial phase of the center study by providing the answers to the six specific questions investigated. Part Two includes possibilities and recommendations for subsequent phases of the study. The last part is frankly speculative and questions the adequacy of the current models serving as bases for teacher education programs and, by implication, for their assessment.

PART ONE: DESIGN AND FINDINGS

Design of the Study

During spring 1973 early preservice students, student teachers, cooperating/supervising teachers, center coordinators, principals, and university supervisors were surveyed about their perceptions of available pre- and inservice instructional experiences, including supervisory practices and more personal, internal

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JUDITH P. RUCHKIN is *assistant professor of secondary education* and *associate director,* Office of Laboratory Experiences, University of Maryland, College Park, Maryland.

professional concerns. The study utilized "self-report" instruments to identify differences in experiences, resources and supervisory behaviors between centers and noncenters, elementary and secondary levels, and, where possible, among school systems and individual center sites. Although self-report data are ordinarily suspect, it is held here that these program inventory questions possess relatively low emotionality. Therefore, the responses received are likely to be reliable and accurate. In addition, similarity in response patterns from different audiences also serves to enhance response credibility.

All student teachers assigned to elementary and secondary level centers as well as noncenters were asked to complete one of three instruments: (a) the experiences profile, (b) the supervisory profile and (c) the teachers' concerns checklist. The experiences instrument focused on both preservice and inservice practices which include the utilization of personnel and material resources. Items for the experiences profile were contributed by members of each of the school systems with teacher education centers as well as by students and faculty at UMCP. The total collection of contributed items was collapsed and organized into a locally developed instrument by Henry H. Wessler, Jr. The supervisory profile is derived from the early 1960's work of Daniel Solomon,[1] now on the staff of the Montgomery County (Maryland) Public Schools. The teachers' concerns checklist represents some of the earlier efforts of Frances Fuller[2] and her colleagues at the Research and Development Center in Teacher Education at the University of Texas, Austin.

The study solicited information from eleven separate audiences: early preservice students in and out of centers, cooperating teachers working in and out of centers, student teachers in and out of centers, university supervisors working in and out of centers, principals of schools in and out of centers, and center coordinators. Figure 1 summarizes the matching of populations with the three self study measures. All students, cooperating teachers and supervisors also responded to a basic observation, teaching and related preparatory options measure. Random assignment of instrument to subjects was made. Each respondent received one instrument with a maximum of one hour administration time. The survey occurred during the first week of May 1973 and resulted in 1226 returns from the 1312 participants. This constitutes a 93% return rate. However, data from 21 center and 26 noncenter cooperating teachers were lost in the process of readying the responses for electronic data processing, which lowers the overall return rate to 89%.

The design of this study is influenced by the goal free evaluation notion advanced by Scriven.[3] He suggests that knowledge of objectives, however specific and/or behaviorally stated, is of lesser importance--and might even be a source of distraction for evaluation--than what actually occurs in a particular program under review.

This has been the initial phase of a comprehensive and systematic attempt to identify what is happening in the centers independent of what center advocates and/or adversaries may prefer to perceive as occurring. The potential inherent in the centers for future field-based programs was clearly excluded from this investigation. It is, of course, hoped that by surveying the on-going practices of a particular group of centers and by utilizing the findings for shared discussion and joint school-college decision making, the potential of the centers might be realized most fully.

In this study the professional induction experience is reflected through a variety of specific training options, supervisory behaviors and levels of

FIGURE 1

Instrument Administration Scheme

Audience	Self Study Measures		
	Experiences Profile	Fuller Professional Concerns Profile	Solomon, Bezdek, Rosenberg Supervisory Profile
Student Teachers in Centers	One-third of available audience	One-third of available audience	One-third of available audience
Student Teachers not in Centers	One-third of available audience	One-third of available audience	One-third of available audience
Cooperating Teachers in Centers	Cooperating teachers of sampled center student teachers	Cooperating teachers of sampled center student teachers	Cooperating teachers of sampled center student teachers
Cooperating Teachers not in Centers	Cooperating teachers of sampled non-center student teachers	Cooperating teachers of sampled non-center student teachers	Cooperating teachers of sampled non-center student teachers
University Supervisors in Secondary Centers	University supervisors of sampled center student teachers	University supervisors of sampled center student teachers	University supervisors of sampled center student teachers
University Supervisors not in Centers	University supervisors of sampled non-center student teachers	University supervisors of sampled non-center student teachers	University supervisors of sampled non-center student teachers
Center Coordinators	Inservice Information All Coordinators	All Coordinators	All Coordinators
Principals in Centers	Inservice Information All in center schools	All in center schools	
Principals not in Centers	Inservice Information	All with student teachers in sample	
Early Preservice Students in Centers	Half of available audience	Half of available audience	
Early Preservice Students not in Centers	Half of available audience	Half of available audience	

concerns. The analysis of the data consists of comparisons between center and noncenter settings, elementary and secondary levels and, where frequencies permitted, between school systems and individual center locations.

Summary of Findings

The basic question underlying the study is whether there are observable differences between centers and noncenters and if so, what distinguishes these two arrangements? There are observable differences between the centers and noncenters of quite specific sort. For early preservice students, student teachers, and inservice personnel there appears to be a greater number and variety of exposures to training practices and instructional experiences in centers than in noncenters.

The following responses to the original six questions of the study give a more detailed description of findings.

Question 1. In what preparatory experiences are student teachers engaged?

Centers provide a significantly greater variety of options than are available in the noncenters in observation, teaching and related preparation. The overall number of experiences reported per student in the centers exceeds that found in the noncenters. Both instructional strategies and materials preparation are more frequent in the center setting. The complete observation and review cycle occurs significantly more often in the centers than in the noncenter situation.

Question 2. Do experienced teachers provide and review experiences for student teachers based on competencies acquired in inservice instruction?

Inservice instruction does serve as a basis for the experiences cooperating teachers provide for student teachers. The findings further suggest that available inservice content is only one of several sources that cooperating teachers draw on in providing training experiences for novices.

Question 3. What is the variation observed in available inservice content and sources of information among experienced teachers?

Center cooperating teachers have more inservice content and sources of instruction than noncenter personnel. The number of competencies acquired by experienced teachers through inservice training is significantly greater in the centers than in the noncenter situations. The University is identified as the source of inservice instruction significantly more in center than in noncenter situations.

Question 4. Who holds conferences with student teachers?

Four conference sources account for almost all of the supervisory conferences conducted in the centers. These four sources are the cooperating teacher, acting alone; the center coordinator acting alone; the cooperating teacher and center coordinator, acting together; and the cooperating teacher, center coordinator and university supervisor acting together. The frequency and participant pattern i supervisory conferences for centers and noncenters are not significantly different.

Question 5. Does the perceived process of supervisory encounters vary between providers and recipients?

The process of supervisory conferences is perceived similarly by providers and recipients and does not differentiate between center and noncenter settings. The only differences obtained signify discrepant findings between elementary and secondary levels. According to both student and cooperating teachers, there is significantly more spontaneous, conferee initiated participation in secondary conferences than is found in the elementary setting.

Question 6. What are the differences in levels of concern for pupils, teacher role, and work situation among various educational personnel?

There are significant differences in levels of concern of various educational personnel. Generally, those close to direct instructional involvement, student teachers and pre-student teachers, evidence the highest concerns in contrast with one, or more, of the following groups: principals, coordinators, and university supervisors. Concern for the role of teacher and work situation distinguished groups most often. However, the most interesting finding is that elementary students and cooperating teachers exceed their secondary colleagues on level of pupil concern. At the same time, neither the pre-student teachers nor the principals exhibit this level effect. The finding is most useful for program planners since it pinpoints the time when this pupil orientation is subject to change.

Most supervisory and concerns components tend to be the same regardless of situation, level, school system or individual center sites. However, a majority of the experience items do distinguish among various audiences. There are significant differences in observation, teaching and related preparation and inservice options reported. Significant differences were obtained for number of preservice experience clusters, instructional strategies, materials preparation and utilization of a complete observation and review process, all seven dimensions above favoring centers to noncenters. There were 12 dimensions on which centers and noncenters could conceivably differ. The majority of these did reveal significant differences favoring the centers. Centers also tend to have more divergence between reporting groups. That is, not only do the centers have more program, but the participants have more mixed perceptions about what the program is, as well.

There are two conceptually linked areas of disagreement. The first is about the observation, teaching and related preparatory options, and the second concerns the instructional experiences clusters. There is some disparity between student teachers and cooperating teachers, independent of setting, concerning observation, teaching and related preparatory opportunities. Student teachers compared with cooperating teachers reveal essentially the same pattern and a similarly mild disagreement. At the same time this area elicits far more difference between center and noncenter student teachers than between center student teachers and cooperating teachers. This is the reverse of the experiences profile pattern in which generational disparities were observed on half the process categories. (The process categories were student alone, observed only, reviewed only, and observed and reviewed.) Furthermore, when both content and process dimensions were included, 36% of the variation in scores of cooperating teachers could not be predicted from those of the student teachers, or equivalently that 36% of the variation in the scores of student teachers could not be predicted from those of the cooperating teachers. (This, of course, means that 64% of the variation was predictable, depending upon preferences for calling the glass half full or half empty.) It appears that the experiences content and/or process disparities are generational while the observation, teaching and related preparatory dimension is situational.

but these were fewer than obtained between center and noncenter settings. It should be noted that the teaching portion of the training practices dimension clearly favored the elementary program and could serve as a guide to adjustments in secondary preparation. However, school systems and individual centers did not differ significantly either in training or experiences provided.

These findings leave several areas for serious discussion among program sponsors. It is possible to conceive of further probes in at least two areas: locating sources that might account for specific program differences, and discovering the impact of center participation on subsequent performance competencies. To wit, what are performance expectancies for graduates of a somewhat richer, more varied program with greater number of training options and wider exposure to practice?

With respect to the ongoing activity, it is worth asking whether the program sponsors wish jointly to address the increasing need for staff development activities and to provide unique or interchangeable roles for each partner. Serious thought might be given to a concentrated, differentiated inservice thrust, recognizing all the special characteristics of adult learners and the increasingly stable teacher population for curricular and instructional planning. In the same vein, might the current conception of student teaching serve as a vehicle for professional renewal of the majority, rather than minority, of school staff? Furthermore, does nondifferentiation, lack of specialization, noted in the basically similar kind of early preservice and student teaching activities and inservice instruction of sources available fit sponsor intentions?

A fascinating conclusion emerges from this initial phase of the center study. Despite the doom-sayers, those who bemoan the intractability and impermeability of the school as an institution, we were able to find some rather readily observable and confirmed differences between centers and noncenters. Finding that differences do exist for the majority of the program components investigated is a cause for celebration, not only because we believe that these observed differences of a richer, more varied, fuller preparatory exposure are desirable, but because the existence of the differences proves that it is possible to do things differently. Despite those who claim that the more things change the more they remain the same, we are able to document some rather remarkable short term differences.

What is called to attention is that it is possible, with the concerted effort of a single individual--supported by two institutions--and some ideas about the desirability of exposure to multiple models, variety of techniques, and range of skills and practices, to accomplish a recognizable and distinguishable program. What was found furthermore, is that what has been said about the centers are not merely myths, but are observable realities as well. That a significantly different training environment can be radiated in the development of educational

personnel through an imperfectly understood confluence of individual and idea is worth recognizing and probing further. The similarity between what was hoped for and what is observably present is particularly striking. This may have implications for other educational designs as well. It is at least possible that focusing on a set of definable, readily comprehended activities, that is, presenting program ideas in a form translatable into action, assists their implementation and on-going accomplishment. That the center program is generally implemented according to plan while many of the educational panaceas of the sixties could not be recognized in field settings suggests something positive about the potential viability of specifically focused and targeted designs in school settings.

Equally remarkable is the fact that the program rests essentially on one individual, the center coordinator. It is surmised that the presence of this individual, above and beyond the daily tasks performed, serves to symbolize and visibly remind others of the commitment to this particular program. Those who regret the accumulation of specialists in the contemporary school may miss the significance of an institutional regularity in the addition of special personnel whenever new programs are sought. The center coordinators are viewed here as emergent staff development specialists in an era that hopefully will finally recognize that pupil service and focus can only be maintained selflessly if the school as an institution also actively and operationally recognizes the needs of its faculty.

PART TWO: POSSIBILITIES AND RECOMMENDATIONS

Having found some differences between the centers and noncenters, one outstanding question is what difference do these observed differences make in the career of a professional. The next phase of the center study aims to move toward identifying the instructional career and behavior of the graduates of the center program. The intent is to progress from instructional involvement to instructional behavior to related pupil behavior. Subsequent to establishing connections between teacher and pupil behaviors it becomes possible to proceed to pupil outcomes.

Centers were found to have richer, more varied, more instructional strategies and more materials based preparation both for the pre- and the inservice groups. An obvious next question is whether given richer, more varied repertoires, the trainees and the experienced personnel actually have a chance to employ what they are now presumed to know how to do. Having established the presence of differences in instructional training, a next question is whether the obtained differences are also accompanied by observable differences in instructional behavior. A variety of observational studies are anticipated to seek answers to this question.

The overall sequence of recommended steps moves from Phase I, systematic description of treatment, to Phase II, general follow-up of both pre- and inservice "products," to Phase III, observational studies of trainees and pupils, Phase IV, internal attitudes of personnel, and Phase V, pupil outcomes. Additional, smaller scale studies further probing the already available data from Phase I are especially desirable as well. Clearly the phases outlined above are only partially sequential. That is, it is quite possible, given personnel and material resources, to concurrently conduct Phases II, III and IV.

Both for purposes of illustration and as an actual proposal for Phase II, four questions that might guide the follow-up activity are outlined. It should be noted that the nonexistence of either unique system or center patterns is a practical boon for such a follow-up. Since the differences observed are center associated rather than tied to specific systems or sites, it is possible to generate randomly selected groups of both pre- and inservice teachers who might actually be located and whose participation may be solicited in such further investigation.

The proposed four phase follow-up moves from the external vantage point, the actions and/or perceptions of others, such as personnel officers and principals, through externally observable behavior, to internal attitudes of personnel and the ultimate, internal outcome of schooling, change in pupil attitudes and achievement. Therefore, these projected phases consciously continue to link the outside and the inside, that is, the behaviorist and humanist domains.

Possible Phase II Questions

1. What is the difference in observed teacher and/or pupil behavior and performance where a significantly richer array of inservice activities have been reported?

2. What differences in hiring, retention and promotion of center and noncenter trainees exist?

3. Does principal assessment of center and noncenter graduates differ?

4. Does pupil assessment of graduates of center and noncenter programs differ?

It needs to be noted that these four questions focus on graduates and inservice personnel mostly from an external vantage point. Figure 2 outlines other possible outcome measures, levels of outcomes and audiences of which these two groups are a part. Additionally, the chart visually represents Phase II through V and differentiates three levels of outcome measures: immediate, intermediate and ultimate. These levels are, in turn, keyed to both external and internal types of outcome measures.

Question 1 above is predicated upon some intriguing--albeit far from perfectly established--connections between instructional variety and pupil gain.[4] There appears to be some demonstrated association between variability in instructional techniques, materials and activities, and cognitive pupil gain to render this a possible area for inquiry.[5] In light of the significantly greater variety of instructional strategies and materials noted in the center treatment, it is worth asking whether this greater variety provided in the continuous preparation program of both pre- and inservice personnel is transmitted in some recognizable form into classroom behavior and transformed into pupil gain. That is, how do pupils, the ultimate clients, receive the benefit of a richer, fuller, more varied continuous teacher preparation program? The cooperating teachers exposed to a greater variety of instructional experiences might transmit these both to the novices and to their own pupils as well. Consequently, these pupils might be possible target groups for tracing such effects. Another prospect for transmission is, of course, the new entrant to the profession.

Pursuit of this possible connection between training program effects and ultimate pupil gain is a long range as well as a long shot activity in light of

Summary of Possibilities for Comparative, Longitudinal Assessment of Center and Noncenter Products by Types and Levels of Outcome Measures

Audiences	Types of Outcome Measures: External	Types of Outcome Measures: Internal	Levels of Outcomes	
Pre-student teachers	Enrollment/withdrawal		Immediate	(1)
	Observed student teacher and pupil performance	Trainee satisfaction in student teaching	Intermediate	(2)
Student teachers	Observed teacher and pupil performance		Intermediate	(2)
		Pupil attitudes and achievement	Ultimate	(3)
Graduates	Hiring, retention, promotion Principal and pupil assessment		Immediate	(1)
	Observed teacher and pupil performance	Teacher and pupil satisfaction	Intermediate	(2)
		Pupil attitudes and achievement	Ultimate	(3)
Inservice personnel	Observed teacher, trainee and pupil performance	Teacher and pupil satisfaction	Intermediate	(2)
		Pupil attitudes and achievement	Ultimate	(3)

FIGURE 2

the work of Coleman,[6] Mosteller and Moynihan,[7] and Averch et al.[8] indicating the currently small, measurable pupil outcomes attributable solely to schooling. That is, the potential contribution of teacher preparation to pupil gain faces great odds at the start due to the extreme smallness of any school effects associated with pupil gain. Nonetheless, it is worth considering and attempting to investigate whether the pupils of teachers benefiting from center programs are distinguishable on presently used measures from the achievement of pupils of those personnel who have not had such exposure. Given the paucity of measured and/or measurable schooling effects, such a study would be undertaken with a genuine, not merely formally stated, null hypothesis.

Besides conceiving product studies, it would be useful to attempt to untangle the potential sources of center effects. The presently perceived center effects may be attributable to several interactive phenomena, or it is possible that center differences are due to concerted deliberate efforts of center personnel. Which combination of personnel is responsible needs to be probed: coordinators' systematic interaction with cooperating teachers, principal and coordinator planned staff development activities, interaction of school and campus personnel, self selection of professional growth options by inservice personnel, and availability of print and nonprint instructional materials are all potential contributors to the fuller, more complete center treatment observed.

In addition to attributing the observed differences to concerted effort, they may also be caused by the concentration of candidates all seeking to learn entry level skills for teaching. The concentration hypothesis is predicated upon the notion of speedier and greater diffusion of training practice where more candidates are present as potential beneficiaries. Verification of this conjecture is possible only for the center sample where contrasts between the high and low enrollment groups can be pursued. It is also worth considering whether the observed center differences are the result of participation in teacher preparation over time. Although the random sample of non-centers did include long-term participants in teacher preparation, it remains for a follow-up study to separate the reports according to length of participation in sponsoring preservice candidates.

There are several small scale studies that may be performed utilizing the data already collected. In addition, there are other investigations that would carry further the findings of Phase I. The questions below start with those for which the data are at hand and conclude with those where additional information needs to be gathered.

Additional questions concerned with identifying sources and/or impact of treatment differences:

1. Are different areas of specialization, such as art and science, differentially associated with training practices, instructional content and process, levels of concerns and/or supervisory practices?

2. What is the relative contribution of level and center influences on available training practices and magnitude and kind of instructional experiences?

3. How does training program utilization differ between those who select teaching early and those who are late decision-makers?

4. Are there recognizable patterns in the utilization of training practices by those exhibiting high, medium and low levels of concern for pupil, role and work situation?

5. Do center graduates and/or inservice participants differ in pursuit of further study with respect to content or sources, when compared with noncenter peers?

6. What is the relationship between the extent, type and duration of pupil contact and level of concerns?

7. What piece of the elementary program accounts for the significantly higher pupil orientation observed?

8. How long does the higher pupil orientation of elementary teachers last?

9. Why are secondary supervisory conferences significantly more participatory than elementary ones?

10. Is there higher awareness of training procedures to be utilized in the induction of novices in the centers?

As noted earlier, a distinction needs to be made in the continuing phases of the center study between those concerned with potential impact on pupils, educational personnel, and program, and those which attempt to identify possible sources for the observed differences. It might be recalled that, to date, this study provides specific information: a detailed, systematic description of the center treatment, but it can make no claims about which of several center components might be responsible for any or all of the observed differences.

This distinction is both theoretically and practically--albeit not statistically--significant. Identifying specific center components, or inputs, that are associated with particular outcomes would allow experimental, or at least quasi-experimental alteration of the factors presumed to have specific effects. Additionally, at times of shrinking resources such as the present, it would then be possible to concentrate personnel energy and material support on those areas, or inputs, which are responsible for the observed program differences. Eventually, the connection between program inputs, mediated by treatment and impact, might then be grounded more firmly. That is, attention to possible sources of observed program differences is linked to the concern with what the impact of those differences is. Where do the obtained differences come from and what difference do the differences make, is another way of stating the relationship between the two areas of source and impact.

PART THREE: REFLECTIONS

The joint institutional support for, and participation in, inquiry into practice has been heartening. Nonetheless, there have been inevitable frustrations in the course of this self study. Technical problems, data processing delays, human fears concerning findings and their utilization, and suspicions about motives for the inquiry were part of the context in which this study was carried out. But, the greatest hardship of all remains an intellectual one. Quite simply, there is little theoretical foundation on which to base a specialized investigation into teaching. Grand or grounded theories of instruction remain largely to be discovered. As a consequence, this study is

essentially atheoretical and is guided by some tentative models of teaching. It is worth noting that nearly all the questions posed by school and campus personnel concerning the center setting had a common core.

The implicit model underlying most of the questions in this study, derived from sponsor assumptions, is the expanding repertoire of apprenticeship. Conceiving of teaching initially and beyond as skill acquisition and opportunities for practice has advantages. Not only are the skills describable, but they are readily quantifiable and thus allow for verification of the model.

But, the study is somewhat more eclectic than such a single model of teaching would imply. It draws on two other models as well. In contrast with the apprentice framework, there is the far less easily verifiable Deweyan reflective conceptualization which guides the work of Daniel Solomon. Posing the indicators and instances of reflectiveness in professional development led to the supervisory conference as the most readily identifiable locus for reflectiveness. With the rather sparse data at hand and with the wisdom of hindsight, this source may not have been the best for verifying the existence of the reflectiveness model. The third model underlying the study is the notion of teaching as becoming, frequently associated with Arthur Combs. The developmental stages conceptualization of Frances Fuller, representing this framework, was explored extensively and some suggestive results with partial disconfirmation of the model have been presented.

Having verified the existence of a rather recognizably richer, fuller, more varied training setting in the centers (but little difference among systems or individual center sites) does allow program sponsors to ponder the worth of the underlying apprentice model as well as the general similarity among the units. It is now possible more explicitly to return to other models of teaching: the reflective as well as the becoming, and perhaps others as well, and actively plan programs and assessments consonant with the model's primary emphases.

In selecting assessment and inquiry strategies, the choice is often perceived as being between carefully controlled, small scale, single variable focused, experimental investigations and more naturalistic, holistic, descriptive, field survey methods. Both approaches seek to build theory which will predict behavior and thereby guide practice. Conceiving of potential research strategies as a range of options along a continuum from philosophical speculation to consistency analysis[9] to historically, anthropologically and sociologically derived field methods[10] to observational approaches[11] to quasi-experimental or experimental designs[12] and beyond, appears the most responsive approach. Although alignment with a methodological "party" is not a requirement for inquiry in teacher education, starting with a conceptual model of teaching is helpful for initial focus and definition. Although conventional wisdom suggests that the selection of research methodologies is determined by the nature of the problem investigated it might be added that the available expertise and the preferences of human subjects and investigators for particular research strategies are best included as well.

It might be remembered that the history of teacher education has been periods of vigorous inquiry interrupted by fallowness. It is hoped that the attention to educational research in general, and to investigations of the continuous preparation of educational personnel in particular, which have seen some degree of intellectual, political and even economic support in the sixties, will not be followed by a period of benign neglect. Only through sustained research effort does it seem likely that sufficiently important and complex questions of practice may be addressed adequately. Nor should one

forget the potentially promising application of findings originating from studies of learning, which are at present largely unincorporated in programs of teacher preparation. There are several that are likely to prove productive.

Reliable principles of human learning have emerged from the literature in recent years. Many of the principles have single direct application to classroom instruction. Few of these established principles have found their way into the teacher education curricula. Some are indeed difficult to apply to classroom learning environments and this may account for their absence. This explanation does not apply to the vast majority of these principles. Now that the redesign of teacher education is receiving attention from both the professional and lay communities, it seems appropriate to propose that some portion of this effort be directed toward finding means of implementing what we do know about human learning. It is indeed no longer acceptable to excuse ourselves by the statement that human learning is too complex and nothing is really known. We know a sizeable amount, but we do not always use it.

If the current wave of performance-based teacher education (PBTE) programs does take seriously the need for validating recommended behaviors, or competencies, we are likely to enlarge the storehouse of tested practices and advance the knowledge base as well. However, without active and continuing inquiry and field testing to establish the validity of particular competencies selected, many of the current PBTE or competency-based teacher education (CBTE) programs may merely mistake packages and labels for new discoveries. The potential for advancing knowledge present in contemporary performance-based programs needs to be realized as a highest priority lest the public promise be converted into no more than heightened expectancies subsequently to be discovered as false claims.

A reconnection, or a clear connection, among philosophers, practitioners and researchers is in order and probably precedes any rise in public confidence in our field. There are those asking big questions about the rights of children, the individual, and the learning community, freedom and authority among others. Still others are trying against great odds to work within a value conflicted present, with institutional designs of a seemingly useless past at the edge of an only dimly perceptible future. Both groups need to be allied with those who possess methodological sophistication in data gathering and analysis. Small pieces of grandly conceived and connected big questions investigated over time seem to be the most promising focus. While interagency efforts would be welcome in such knowledge production, it may be time to remind ourselves of the university with its large number of doctoral students as a uniquely appropriate source for such ongoing investigations.

What is called for is a greater variety of techniques addressing a range of concerns in teaching from the specific to the general in a systematically interrelated and sustained fashion. At present we might humbly remind ourselves that the long-sought theoretical underpinning of teaching is only partially visible. While its patterns and regularities may be exceedingly complex, it remains for us to devise strategies that render teaching more readily comprehensible, transferable and capable of improvement.

Toward this end, moving back and forth across several conceptual modes, utilizing a range of research techniques in an orderly fashion, is seen as a promising alternative to despair, or to single-minded conceptual or methodological fixation. This is not simply a call for any kind of inquiry, but rather for an array of investigations that are linked either conceptually and/or

methodologically. A contemporary version of the early agricultural revolutionary three-field rotation plan is the essence of this notion.

For purposes of illustration, the range of methodologies proposed are reduced to two--naturalistic and experimental--and the models to three--apprentice, reflective and becoming. Therefore, the sustained systematic progression strategy proposed here moves back and forth, horizontally, vertically and diagonally over the cells in Figure 3. This represents an attempt to seek

	CONCEPTUAL MODELS OF TEACHING		
INQUIRY MODES	APPRENTICE	REFLECTIVE	BECOMING
NATURALISTIC			
EXPERIMENTAL			

FIGURE 3

connections among the multiple and overlapping roles of teaching that may most productively be illuminated by each method. By allying what are often seen as competing views and techniques it is acknowledged that teaching has many purposes, many outcomes and many values. These complexities inherent in any educational program assessment may be faced most fully if the range of available research techniques are concurrently and/or sequentially brought to bear on at least tentatively bounded conceptual areas. Both for maximal theoretical and practical pay-off we propose this sustained systematic progression strategy to guide successive phases of the center study and other investigations as well.

FOOTNOTES

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